IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A misalignment detector in an image forming apparatus in which a latent image is formed on an image carrier by using a plurality of laser beams, the misalignment detector detects a position-shift of each laser beam, comprising:

a two-dimensional image sensor configured to read a position detection pattern that is formed on an image carrier;

a light source that outputs light;

a synthesizing unit ~~that passes~~ configured to refract input light from the light source and to pass the light of the light source so as to illuminate the position detection pattern, and collects and reflects a light reflected from the position detection pattern; and

a focusing unit that focuses the light reflected from the synthesizing unit on the image sensor.

Claim 2 (Original): The misalignment detector according to claim 1, wherein the light synthesizing unit includes a prism.

Claim 3 (Original): The misalignment detector according to claim 1, wherein the position detection pattern includes a plurality of lines that are parallel to each other.

Claim 4 (Original): The misalignment detector according to claim 1, wherein the position detection pattern includes dots of a predetermined size.

Claim 5 (Original): The misalignment detector according to claim 1, wherein the image sensor and the light source are mounted on a same circuit board.

Claim 6 (Original): The misalignment detector according to claim 3, comprising:

an adding unit that adds up image data of a two-dimensional image sensor in any one of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit.

Claim 7 (Original): The misalignment detector according to claim 4, comprising:

an adding unit that adds up image data of a two-dimensional image sensor in any one of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit.

Claim 8 (Currently Amended): A misalignment detector, in an image forming apparatus, that detects misalignment of laser beams that form latent images on a photosensitive drum based on detection of a position detection pattern on an image carrier, comprising:

a light source, a synthesizing unit, a focusing unit, a two-dimensional image sensor, and a misalignment calculator that detects the misalignment of the laser beams based on an image formed in the image sensor, wherein the light source, the synthesizing unit, the focusing unit, and the image sensor are arranged in such a manner that light illuminated by the light source passes through the synthesizing unit and is refracted by the synthesizing unit so as to illuminate the position detection pattern, gets reflected from the position detection pattern, passes through the synthesizing unit so as to be focused by the focusing unit on the two-dimensional image sensor.

Claim 9 (Currently Amended): An image forming apparatus comprising:

an image carrier configured to form a latent image by a plurality of laser beams; and

a misalignment detector that detects misalignment of the laser beams,

the misalignment detector including,

a light source,

a synthesizing unit,

a focusing unit,

a two-dimensional image sensor, and

a misalignment calculator that detects the misalignment of the laser beams based on an image formed in the image sensor, wherein

the light source, the synthesizing unit, the focusing unit, and the two-dimensional image sensor are arranged in such a manner that light illuminated by the light source passes through the synthesizing unit and is refracted by the synthesizing unit so as to illuminate ~~the~~ a position detection pattern, gets reflected from the position detection pattern, passes through the synthesizing unit so as to be focused ~~by~~ on the two-dimensional image sensor.

Claim 10 (Currently Amended): An image forming apparatus comprising:

an image carrier configured to form a latent image by a plurality of laser beams; and

a misalignment detector that detects misalignment of the laser beams,

the misalignment detector including:

a light source that outputs light;

a two-dimensional image sensor configured to read a position detection pattern that is formed on the image carrier;

a synthesizing unit that passes the light of the light source and refracts the light so as to illuminate the position detection pattern, and collects and reflects a light reflected from the position detection ~~patter~~ pattern; and

a focusing unit that focuses the light reflected from the synthesizing unit on the two-dimensional image sensor.

Claim 11 (Currently Amended): A misalignment detector in an image forming apparatus in which a latent image is formed on a photosensitive drum by using a plurality of laser beams, while achieving an independent image, the misalignment detector detects a position-shift of each laser beam based on an image formed on an image sensor of a position detection pattern that is formed on an image carrier, comprising:

a light source that outputs light;

a synthesizing unit that passes the light of the light source and refracts the light so as to illuminate the position detection pattern, collects a light reflected from the position detection pattern, and reflects the collected light off a first reflecting surface; and

a focusing unit including a second reflecting surface that focuses the light reflected from the synthesizing unit on the image sensor.

Claim 12 (Previously Presented): The misalignment detector according to claim 11, wherein the light synthesizing unit includes a prism.

Claim 13 (Previously Presented): The misalignment detector according to claim 11, wherein the position detection pattern includes a plurality of lines that are parallel to each other.

Claim 14 (Previously Presented): The misalignment detector according to claim 11, wherein the position detection pattern includes dots of a predetermined size.

Claim 15 (Previously Presented): The misalignment detector according to claim 11, wherein the image sensor and the light source are mounted on a same circuit board.

Claim 16 (Previously Presented): The misalignment detector according to claim 13, comprising:

an adding unit that adds up image data of a two-dimensional image sensor in any one of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit.

Claim 17 (Previously Presented): The misalignment detector according to claim 14, comprising:

an adding unit that adds up image data of a two-dimensional image sensor in any one of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit.

Claim 18 (Currently Amended): A misalignment detector, in an image forming apparatus, that detects misalignment of laser beams that form latent images on a photosensitive drum based on detection of a position detection pattern on an image carrier, comprising:

a light source, a synthesizing unit including a first reflecting surface, a focusing unit

including a second reflecting surface, an image sensor, and a misalignment calculator that detects the misalignment of the laser beams based on an image formed in the image sensor, wherein the light source, the synthesizing unit, the focusing unit, and the image sensor are arranged in such a manner that,

light illuminated by the light source passes through the synthesizing unit and is refracted by the synthesizing unit so as to illuminate the position detection pattern, gets reflected from the position detection pattern, passes through the synthesizing unit so as to be focused by the focusing unit on the image sensor.

Claim 19 (Currently Amended): An image forming apparatus comprising:

a photosensitive drum to form a latent image by each of a plurality of laser beams;

an image carrier with a position detection pattern; and

a misalignment detector that detects misalignment of the laser beams, the misalignment detector including a light source, a synthesizing unit including a first reflective surface, a focusing unit including a second reflective surface, an image sensor, and a misalignment calculator that detects the misalignment of the laser beams based on an image formed in the image sensor, wherein the light source, the synthesizing unit, the focusing unit, and the image sensor are arranged in such a manner that light illuminated by the light source passes through the synthesizing unit and is refracted by the synthesizing unit so as to illuminate the position detection pattern, gets reflected from the position detection pattern, passes through the synthesizing unit so as to be focused by the focusing unit on the image sensor.